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004 EPA STAR Graduate Fellowship Conference *Next Generation Scientists—Next Opportunities*

The Effects of Urbanization on the Dispersal of Native Forest Songbirds

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bitat loss and fragmentation due to urbanization are dramatically ring the population dynamics and community composition of gbirds in the Puget Sound Region and leading to the extirpation pecies in some areas (Donnelly and Marzluff 2004). For bird ulations to remain connected after their habitat becomes isolated separate patches, they must be able to successfully disperse ween habitat remnants.

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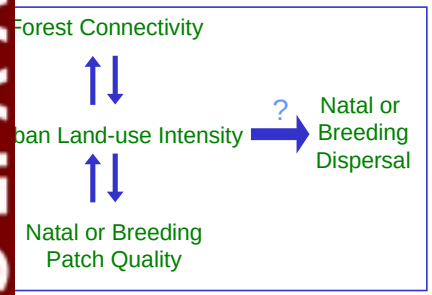
o describe the process of bird dispersal in a heterogeneous an landscape characterized by a pattern of fragmented forest ches

o make recommendations to local policy makers, city planners, land developers regarding the land-use and land-cover patterns are most conducive to successful bird dispersal

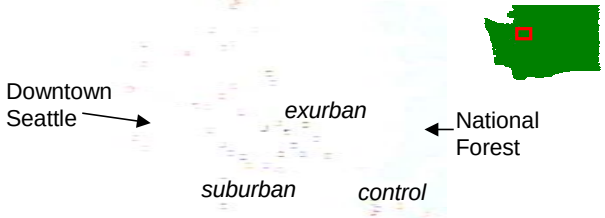
ey Variables



Color-banded Song sparrow

Study Area

Suburban, exurban, and control sites in the Seattle metropolitan area were chosen with a stratified random sample of three landscape metrics: mean patch size, contagion, and the % forest and % urban land cover

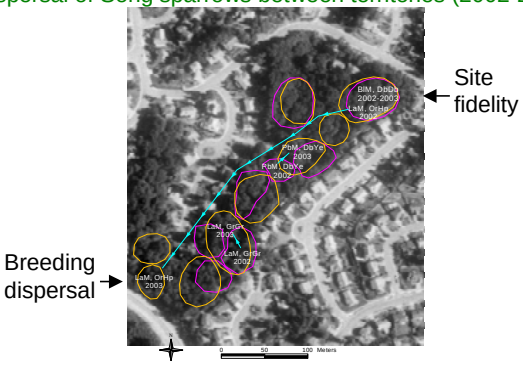


Post-fledging movements

The movements of juvenile birds after parental independence are measured by radio-tracking and recording locations every day for a 3-9 week period (battery life). Note the contrasting movement patterns of a radio-tagged American robin (yellow) and a Song sparrow (blue).

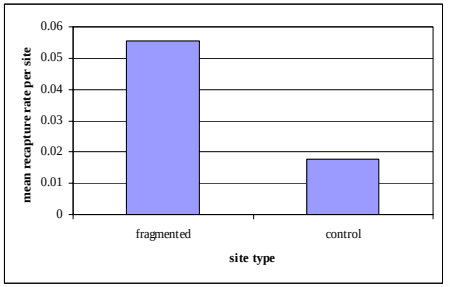
Short-distance dispersal

Short-distance natal (juvenile) dispersal and breeding (adult) dispersal within this region is measured by recapturing and resighting uniquely color-banded birds. This figure shows within-site dispersal of Song sparrows between territories (2002-2003).



Natal philopatry and Site fidelity

Many of the uniquely color-banded birds stay at the same study site where they were first captured. Mean recapture and resighting rates are higher in fragmented sites than in control sites (total: 162 birds recaptured/resighted of 2764 banded (5.9%)).



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